

REMARKS

Reconsideration of the Office Action of August 2, 2006 is respectfully requested. A one month extension of time is requested and the fees associated with a one month extension of time are being submitted with this Amendment.

In this amendment, independent claims 1 and 12 have been amended to present earlier the secondary shaft of the belt type CVT system to make the claims read easier. Also, new dependent claims 14 to 22 have been added. New dependent claims 14-22 have been added to expand on the scope of varied coverage under the claims. These new claims are also respectfully submitted to be supported by the original specification as, for example, claims 14-16 on page 7, line 20 – page 8, line 15, and Fig. 2 and claims 17-22 on page 8, line 16 – page 9, line 12 and Fig. 2. Accordingly, no new matter is considered to be presented by these amendments.

Prior to discussing the rejections raised against the claims a review of the present invention is made. The present invention relates to a power transmission arrangement of, for example, an all terrain vehicle (ATV) with a continuously variable transmission (CVT). In the present application, a preferred embodiment is described as having a transmission with a three-axis structure constructed by:

- (a) the crankshaft axis;
- (b) the primary shaft axis (the sub-shaft is also shown on the same axis); and
- (c) the secondary shaft axis.

These axes are parallel and non-concentric relative to each other.

In addition, the clutch member is arranged or located between the sub-shaft and the primary shaft.

Furthermore, the generator and the recoil starter are arranged on different axes amongst the crankshaft and the sub-shaft, e.g. the crankshaft is mounted with the generator, and the sub-shaft is mounted with the recoil starter.

The claimed invention results in an effective arrangement of the transmission components and makes the transmission system narrow in the lateral direction which is helpful in, for example, an ATV as it provides easy access for the driver.

Claim Rejections – 35 USC § 103

Claims 1, 3, 5-9 were rejected under 35 U.S.C. 103(a) as being unpatentable over Yamauchi in view of new reference U.S. Patent Application Publication No. US 2003/0092529 to Gu et al.

Claims 4 was rejected under 35 U.S.C. 103(a) as being unpatentable over Yamauchi in view of Gu et al. and U.S. Patent Application Publication No. US 2002/0033295 to Korenjak et al.

Claims 12 was rejected under 35 U.S.C. 103(a) as being unpatentable over Yamauchi in view of Gu et al. and Korenjak et al.

In each of the rejections above reliance is place in part or entirely on the combination of Yamauchi and Gu et al.

Regarding independent claims 1 and 12, the Examiner acknowledges that Yamauchi lacks a centrifugal clutch member arranged between the sub-shaft and the primary shaft and housed in the crankcase.

In the Office Action it is asserted that this deficiency in Yamauchi is remedied by the disclosure in the new “Gu” reference. That is, the Examiner relies on Fig. 3 of Gu, which illustrates a hybrid power transmission system having two power sources, i.e., a first power source with a transmission box and a second power source in the form of a motor/generator. In Fig. 3, the first power source is connected to the primary pulley shaft 21, and the electric motor/generator 50 is connected to the drum 62A of the centrifugal clutch member 60A via the second transmission device 70, more specifically, the second transmission belt 72.

In the Office Action, the Examiner recites that Gu discloses:

- a. A centrifugal clutch member (i.e., Fig. 3, element 60A); and
- b. Wherein the centrifugal clutch member is arranged between a primary shaft member (i.e., Fig. 3, element 21) and a pulley shaft member (i.e., Fig. 3, element 62A).

Applicants respectfully submit that the Yamauchi reference and the Gu reference, when read in their entirety, fail to present a combination that presents a *prima facie* case of obviousness. That is, as explained in greater detail below, the introduction of a clutch as well as the clutch’s arrangement in the transmission system utilized in Gu is entirely driven by the need to properly interrelate the two power sources (i.e., the hybrid system’s generator and internal combustion engine). In other words, were it not for having the electric/motor and internal combustion dual power system in Gu there would not be present or needed the clutch system that is provided in Gu solely for the purpose of providing for the desired dual power system interrelationship (e.g., see the disclosure in paragraphs 29 to 32 on page 2 of Gu).

Yamauchi's system features a clutch mechanism 80 arranged at the downstream side of both the CVT power transmission system and the universal 79 as shown in Figure 3 of Yamauchi. More specifically, the transmission unit 8 of Yamauchi, which transmits the power from the driven shaft 56 (the secondary shaft) to the axle shaft 76, is operated as a swing arm and supported to the body frame 2 through a shock absorber 10 elastically and swingably. Applicants note that this arrangement in Yamauchi of having the clutch mechanism 80 out of the CVT transmission case 49 is useful in making the clutch mechanism readily accessible for routine maintenance and adjustment as is common in the preferred "scooter" embodiment described in Yamauchi.

The positioning of the clutch in Gu is driven by the need to interrelate the components of a dual power system components and is set up such that whenever the electric motor is operating so too is the primary pulley regardless of whether the combustion drive is operating as a supplement to that drive via the flywheel clutch engagement (e.g., see the discussion in the left column of page 3 of Gu and the relied upon Figure showing the electric motor always in driving engagement with the primary pulley).

On the other hand, the Yamauchi system is directed at providing a compact, "overlapping L" single drive source arrangement with readily maintenance accessible downstream positioned clutch system used for engagement and disengagement at the designated time.

Accordingly, since Yamauchi is totally devoid of a dual power hybrid system, it is respectfully submitted that one of ordinary skill in the art having read the references in their entirety would not have looked to the clutch/dual power system interrelationship in Gu as being a teaching of interest in the Yamauchi reference. The non-obviousness of

the asserted combination is made even more evident when considering that Yamauchi has a clutch positioned at a location which provides the above noted ready access benefit relative to the described usages such as in a scooter and facilitates the generally symmetrical two overlapping “L-shaped” self contained compartments upstream of the clutch.

Moreover, the introduction of the extend through drive shaft (the primary shaft) and the encompassing pulley drum about the shaft which is set up for continuous pulley drive relative to the electric motor/generator, would require a significant redesign in the system of Yamauchi together with the loss of the benefits of its present clutch arrangement.

In other words, it is respectfully submitted that the Gu clutch arrangement, which is solely driven by the need for a dual power system interrelationship and operates to have the combustion motor supplement the electric motor by bringing it on line together with the electric motor when added power is required while the electric motor is always engaged with the primary pulley when running (or being driven in generator fashion), is not applicable to the illustrated shaft and clutch set up in Yamauchi, which is set up to provide two overlapping “L-shaped” self contained drive and drive transmission compartments together with a downstream clutch system at a readily accessible location .

In view of the above remarks, Applicants submit that the previously presented claims are patentable over the applied references. Also, the newly dependent claims even further differentiate the claimed invention over the prior art. As an example, reference is made to new dependent claims 17 and 18 which recite the lineal spacing of

the clutch between the two noted shafts unlike the concentric “pass-through and back” arrangement in the shaft/clutch arrangement disclosed in Gu.

Also, Applicants respectfully submit that this Amendment and the above remarks obviate the outstanding rejections in this case, thereby placing the entire application in condition for immediate allowance. Allowance of this application is earnestly solicited. Also, if any fees are due in connection with the filing of this amendment, such as fees under 37 C.F.R. §§1.16 or 1.17, please charge the fees to Deposit Account 02-4300; Order No. 032405R167.

Respectfully submitted,
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